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Agricultural.

Roots as Stock Food.

We have strong doubts if it is profitable to grow roots as stock feed in this country, either in the Eastern or Western States. When they can be grown for market those which are not of the proper market size can be used for that purpose to very good advantage, but as a fattening food corn can be grown under good conditions to produce more pounds of flesh at less cost than with any root crop that we know. As a succulent food, to assist digestion and keep the organs in good condition, ensilage, when properly used, has shown that it is far superior to any roots, and the labor of growing and putting in the silo is much less while it has the additional advantage that, if well packed in a good silo, it may be kept more than one season before being used, if not needed.

The growing of roots for stock feeding was a custom borrowed from England and other European countries, where corn does not grow, and thus they have not the use of it as a grain feed excepting as purchased from this country, nor as ensilage. But as a food to be used as a change when one has no silo, and it may be has not stock enough to make it seem desirable to build and fill one, it may prove profitable to grow roots even for feeding purposes, though as we have said above, we would try to grow them in such a way that we could market the best at a price which would leave those used for the stock practically without cost.

When having them to feed out, there is a difference in the way they are used and the stock they are given to in the profit that may be derived from them. We have fed mangel-wurzel and sugar beets, carrots and both rutabaga and English turnips, and we thought we obtained most value from them when given in moderate amounts to stock, that is, to growing young stock, cows with calf, breeding sows and sheep in the winter. Indeed, we doubt if the swine and sheep are not better for having a small daily ration of root beets or turnips than they would be if given ensilage.

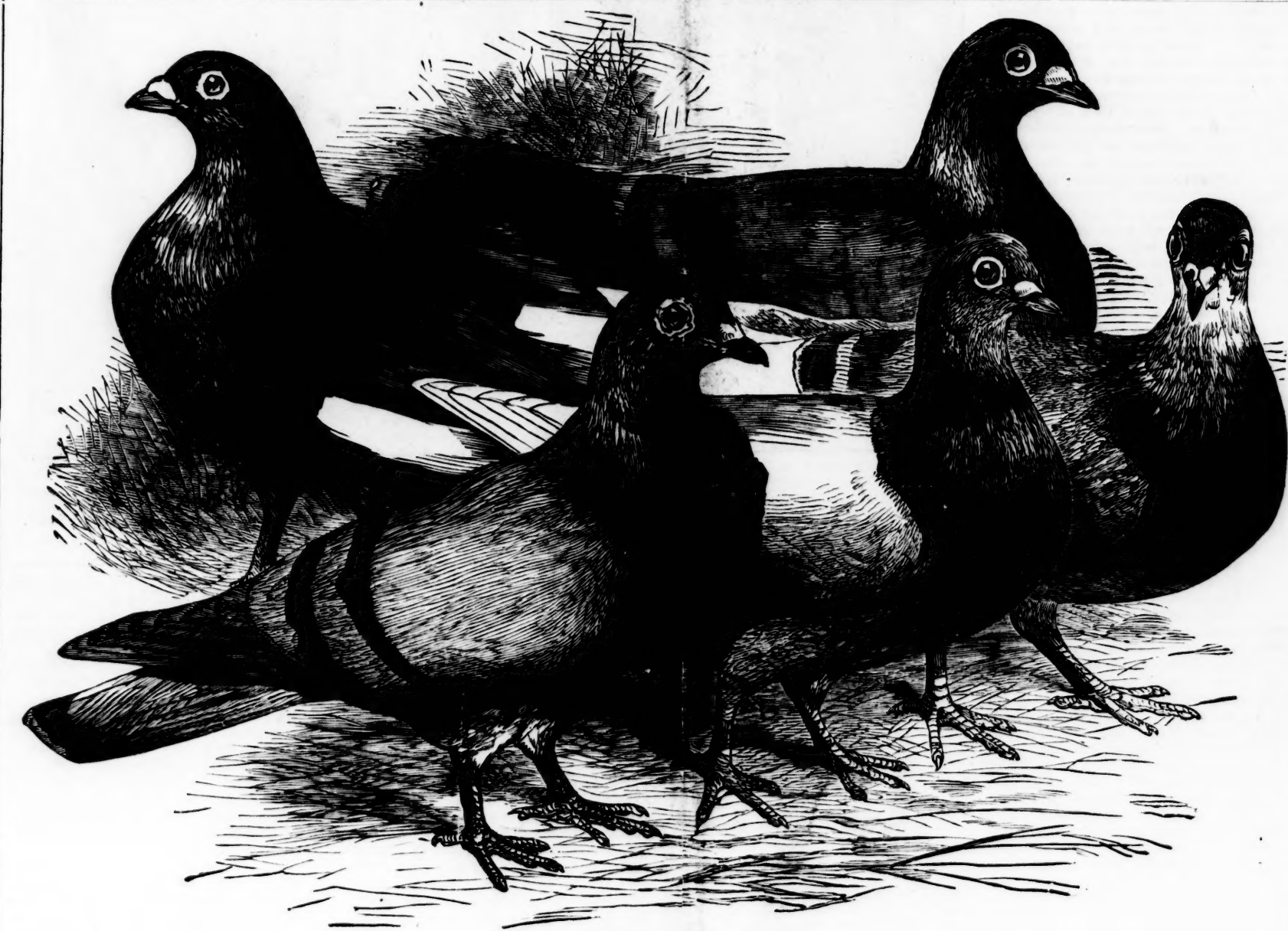
We prefer the sugar beet or the globe beets to the mangels, partly because we think they are surer as a crop and because they keep better during winter, and the rutabaga to the English turnips for the same reason, though in both cases the largest possible crop may be grown at the least cost with the mangel and the flat turnips.

Another use for roots in stock feeding is to commence the fall fattening of animals with them before beginning heavy feeding of grain. They seem to stimulate the digestive organs so that when the heavier or heartier, more nutritious grain is given it is much better assimilated, and builds up the whole flesh and fat much faster than when the stomach has not been prepared by the lighter food. It may be upon the same principle that the person intending to eat a hearty dinner begins with a plate of soup which has but little nutrition in it, but serves as a preparation for the other food that is to follow.

But we never have found it necessary to grow roots for this purpose. There was usually a good grass feed early in the fall, and from the garden, unmerchanted roots, even leaves from cabbage, beets and turnips, some unripe corn, pumpkins and squashes, even early fall apples, sweet potatoes having the best reputation, to give the early start, before we began grain feeding.

We never liked the windfalls from the late winter apples, although we have tried them and saw no good results from them. A well-ripened, fall apple, even if sour, seemed to be good, but the unripe apple we thought had no value, and when we cut them we discovered there was no more good result than we had given the grain without them. Of course we could not test our experiments by daily or weekly weighing of the animal, as is done at the Agricultural Societies, but we had a good opinion of our feeding ability, and perhaps it was about as reliable as the scales which tell how much has been gained in a week, but cannot tell whether the slaughter how much of that has been solid flesh, and how much is water that will be lost in killing or afterward. As a feeding says, "that is another story," and we may comment upon it another time when writing of the gain in live weight made under certain conditions which we have not thought added much to the merchantable meat to be sold.

We believe that where corn can be grown, ensilage and corn meal are the cheapest and best fattening foods, and where they are not



CARRIER PIGEONS.

grown roots can be used as a substitute for the ensilage, and that either will prepare the stomach of the animal to digest and to assimilate the more concentrated grain foods, and we believe that in certain cases as of breeding stock roots are better than grain, and in winter, when clover pasture is not available, better than any other green food.

We have cooked roots of nearly all kinds for feeding to stock, and also apples, and fed them mixed with grain and with skim-milk, and while we were not sure that potatoes and sweet apples did not give better results when cooked than when fed raw, we doubted if the possible gain paid for fuel and labor, and were very sure that any of the other roots gave better results when fed raw, but made free from dirt by washing.

Wealth from By-Products.

The expert chemist is an important figure in the industrial world today. He can earn not only fame, but also a large income, and he saves manufacturers many millions of dollars every year.

Of course, nine out of ten chemists stick to the old routine, but the tenth goes in for industrial chemistry, and either allies himself to some progressive and flourishing manufacturer or independently conducts his industrial experiments and spends his time and brains in devising schemes for the utilization of by-products.

One doesn't talk much about waste products now. So little is wasted that it doesn't deserve mention. The Chicago joke that the packing houses utilize everything about the pigs save their squeals, and are planning to make the squeals into whistles, has more point than most Chicago jokes.

Probably the great slaughter houses furnish the most familiar illustration of the modern thrift in the utilization of what was formerly considered waste; and even the smaller abattoirs, while they haven't attained the scientific perfection of the Chicago packing houses, are reformed characters.

It was only a few years ago that the abattoir was usually built upon the bank of a stream, and all refuse was washed into the stream. In course of time neighbors were inconsiderate enough to protest against the practice. Sanitary bees invaded innumerable bonnets, and a howl of protest went up against the abattoirs. It was necessary to dispose of the refuse in some fashion. Chemists were called in.

Methods for drying the refuse and extracting all the grease were developed. The grease went into the manufacture of soap. The residue was converted into fertilizer. After jelly had been made from the hocks, the hocks and horns were used of buttons, knife handles, etc. The health of the neighborhood and the income of the slaughter men went up.

The development of the tremendous aniline color industry is altogether due to chemical experiment with waste product. In the dry distillation of coal or wood for gas, the gas passes through a succession of washers, which take out its impurities. These impurities, including ammonia, carbolic acid, acetic acid and various nitrogen compounds, were formerly waste, but are now separated and used. In fact, nearly all of the acetic acid in the market is secured from the dry distillation of wood.

Five per cent. of the coal used in gas manufacture is coal tar, and by experiment chemists found that this coal tar, always regarded as waste residue, contained substances useful in the making of dyes. Fully

ten per cent. of the weight of the coal tar is available for this purpose, and upon the basis of this discovery the enormous coal tar color industry has grown.

New plants have been put into many of the coke regions to collect the coal tar liberated in coke manufacture, and it will not be long before the open coke oven will be a thing of the past. Where coal is burned in an open oven no coal tar can be collected, and large profits are literally thrown away, but by burning the coal in closed retorts all the coal tar can be recovered and used.

This color industry, which chemists call the greatest of the modern chemical industries, has called for other chemical developments. It demands large quantities of sulphuric acid, of soda, etc., and chemists have sharpened their wits upon the problem of obtaining these products at a minimum expense.

Until recently the greater part of the sulphur used in this country was imported from Sicily. Now, through chemical processes, the sulphur contained in gold, silver and zinc is liberated and burned to sulphur dioxide, from which almost all of our sulphuric acid is made.

In connection with all of our mining development, chemistry has played an important part. Ores can be mined with profit today that would have been practically worthless a few years ago. In the old mining days only high grade ore was profitable, and only a certain percentage of the gold contained in the ore was freed.

The tailings thrown aside held a considerable quantity of gold, but could not be worked by the ordinary processes, so were piled mountain high and disregarded until chemists discovered that the gold was soluble in potassium cyanide, and that by washing in a very weak solution of potassium cyanide, the tailing gold could be profitably separated from the refuse. The same process has led to the working of low grade ores, running \$4 or \$5 to the ton, which could not be profitably worked by the ordinary mining processes.

The silver contained in lead has also been freed and utilized. It was found by chemists that when the melted lead was mixed with zinc, the silver formed an alloy with the zinc and floated to the surface. When this mass was taken from the lead and heated in a retort, the zinc, being volatile, was freed and left a deposit so rich in silver that it was easily purified.

The applications of chemistry to mining processes are legion, but it is in other branches of industry that practical chemistry is now making its strides. The Standard Oil Company is a hardy exponent of the merits of industrial chemistry and has expert chemists constantly employed. As for that matter, so have all the great gas plants, coke plants, sugar refineries, starch factories, etc.

The original waste of the oil business was enormous; now it is next to nothing. Of course, the primary aim is the production of kerosene, but crude oil contains on the one side oils lighter than kerosene, such as gasoline, naphtha, and, on the other side, products much heavier than kerosene, such as paraffin. At one time all of these by-products were waste; now every one of them is utilized.

By first distillation, the lighter oils are freed and collected. Then the kerosene is distilled, leaving a product that is worked over into hard paraffin and soft paraffin or vaseline. A heavy oil left after the collecting of the paraffin is used for lubricating

and fuel oil, much of it being made into car and axle grease. After all these processes a solid mass of carbon is left in the retorts, and this is used to a considerable extent in making carbon sticks for electric light.

When one considers that until a few years ago every one of these products save kerosene was absolute waste, one can realize to some extent the place chemistry is taking in the industrial world.

The dairy business is one of the industries with which the chemist is busy himself, and the results so far have been most satisfactory, although a much broader field for the use of caselin is prophesied. The large creameries, having turned out their cream and butter, were confronted by great quantities of skim milk for which there was apparently no use. Skim milk was a drug on the market, and in many cases was drained off into neighboring streams.

The chemist stepped in and changed all that. The milk is curdled with alkali, and a dried product produced which is soluble in water. This caselin has been used for paper sizing, kalsomining, etc., and successful experiments have been made with it in the manufacture of artificial foods. Moistened with water to a gelatinous consistency, put under a hydraulic press and then washed in acid, it forms a hard and indissoluble substance, of which buttons and similar articles are made. Chemists say that the caselin powder, which is like a fine tasteless flour, may be substituted for milk in cooking, and has a great future in this respect.

Chemistry applied to the sugar industry has been invaluable; and particularly in connection with the beet sugar manufacture, has recently effected a wonderful saving. The waste in the making of beet sugar was at first enormous, because the molasses was absolute waste. It contains products from the beet roots which give it a very bitter taste, and is also rich in an alkali which spoils its flavor. So, although more than one-half of the weight of the molasses was sugar, it was unavailable save for fermentation and alcohol.

Experiment proved that dry lime, mixed with the molasses, combined with the sugar, forming a product insoluble in water. Washing the molasses would then separate this product from all the other elements. The lime and sugar product being heated with carbonic acid, the lime combined with the carbon, forming an indissoluble product, and leaving the sugar free to be easily separated. By the process today ninety per cent. of the sugar is recovered from beet molasses, and there is practically no molasses in the beet sugar factories.

The glucose manufacturers have called in chemists, and found a new source of profit. The corn grain has, in addition to its starch product, a tiny germ in which lies its life principle. This germ was formerly crushed with the starch, separated and thrown aside as waste. Very lately it has been shown that this germ is rich in oil, which can be

utilized. The germ is now separated from the starch and crushed. The oil gathered finds a ready market, and within the last five years millions of dollars worth of this oil has been exported to Europe, where all corn products are in great demand. After the oil is taken from the germ, the gluten left in the cake is used for varnish, and the residue is used for cattle food.

The cornstalk also is ground and used for cattle food, but first the pith of the stalk is extracted and used for the lining of vessels, the theory being that if a fissure occurs in the framework of the vessel, the pith lining, becoming wet, will swell, and to some extent close the fissures.

The cottonseed oil industry has eliminated its waste almost entirely, although twenty years ago every part of the cottonseed save the oil was waste product. In the cottonseed oil factory now the seed is collected after coming through the cotton gin, and is first stripped of its lint, which is used in the manufacture of certain kinds of paper, felts, etc. Next the shell of the seed is removed, and either ground for cattle food or used for fuel. In the latter case the ashes are collected for potash.

The kernel of the seed is ground and pressed to extract the oil, and the residue is used for cattle food. The oil in process of refining gives off a waste which enters into soap making and the making of oleomargarine.

Glycerine, used in such great quantities at present, was for years a waste product. All waste from fatty acids contains compounds of an acid with glycerine. The acid will combine with an alkali, leaving the glycerine in a watery solution, from which it is collected by evaporation and distillation. Immense quantities of this reclaimed waste product are used in the making of explosives.

When steel is melted in a Bessemer converter the phosphorus, which used to be a nuisance, is separated from the steel by the introduction of lime, with which the phosphorus combines readily. This phosphorus is then used as a fertilizer.

The slag from iron furnaces is converted into cement.

The tin is taken from old tin cans by chemical process and is used over and over again.

Even the acids used for chemical purposes are not allowed to outlive their usefulness with the accomplishment of their purpose. The Standard Oil Company formerly wasted great quantities of sulphuric acid after it had been used to remove the impurities from the oil. The acid was drained off into the river. Now it is used in a fertilizer particularly adapted to soil where phosphate rock must be dissolved.

Then again in certain great galvanizing works the iron was cleaned with sulphuric acid, which was then run into the nearest river. This method of disposing of the waste was forbidden. Chemists were consulted. The solution was made stronger so that it could be clarified and used repeatedly. Finally, when it could no longer be used for washing, it was evaporated, and the sulphate of iron extracted from it. This by-product proved so valuable that it is now the chief product of the works.

From the waste product of the wine industry chemists now obtain a crude cream of tartar, which, refined to a high degree, constitutes the acid principle of the best forms of baking powder.

it may not at least find profitable incarnation in cattle food, fertilizer or glue.—N. Y. Sun.

One Hundred and Fifty Bushels of Corn Per Acre.

Recently we published an editorial casting some doubt upon the raising of 150 bushels of corn per acre, and making a statement [that, while it might have been done, we had never had the good fortune to be able to prove it with our own knowledge. However, it has always been our policy to give both sides of the question, believing that is the only way to get at the truth.

In this connection we have a very courteous communication from A. A. Montgomery, secretary of the Hampshire, Franklin and Hampden Agricultural Society, in which he encloses a statement of Frank M. Foote of Chester Centre (postoffice Huntington, Mass.), who competed for the corn premium at their fair last fall, and Mr. Montgomery believes it a true statement, as every bushel was measured, and Mr. Foote got a harvest of seventy-five bushels per acre of shelled corn. He will also compete again this year under the same class.

Mr. Frank M. Foote's statement to the Agricultural Society at the time of entering his crop was as follows: "The one acre of corn I entered for premium had been in grass, always. My father and grandfather never had it plowed. Last year I had a fine piece of corn on the turf, and this year I raised, on the same ground, 151 bushels of corn, and five tons of dry stover. I had 164 stooks, manure was plowed in, about thirty loads being used, harrowed thoroughly with a wheel harrow; planted with corn May 30; there was never a hoe used; the piece was cultivated every week with Planet Junior cultivator, the first week used weeder."

His statement was as follows: The crop was made debtor to plowing \$3, manure \$18, harrowing \$1.50, planting \$1, seed 25 cents, cultivating five times \$2.50, harvesting, husking, etc., \$11.80; total, \$38.05.

Credit as follows: 75 bushels of shelled corn \$64.17; also five tons of stover \$25; total, \$89.17, showing a net profit for the acre of corn of \$51.12.

The same agricultural society published a report of a crop of corn raised by F. A. Martin of Leeds, Mass., in which he claims to have harvested 150 bushels of ears to the acre. This statement is something as follows: The ground was in corn in 1898 and 1899. The soil consists of rather heavy loam; used thirty loads stable manure and three hundred pounds corn fertilizer.

Plowed once the last week in May, seven inches deep; harrowed over two times with disk harrow, the price for the two days \$8; used twenty loads of ashes, thirty bushels each; planted June 4, with corn planter, one-half bushel common yellow seed corn; cost of seed fifty cents; cost of planting seventy-five cents.

Went over once with weeder when corn first came up, then cultivated it twice with Planet Junior cultivator one way twice in a row; also harrowed twice. It was cut with corn cutter about the middle of September, stacked with corn horse; left until the middle of October and the corn husked in the field.

It took about fifteen hours to cut the corn at fifteen cents an hour, or actual cost \$2.40. The corn was husked at four cents per bushel; there being 150 bushels, the cost was \$6; there were four tons of fodder.

In this same connection E. F. Bradford of Conway, Mass., writes in criticism of our article about growing 150 bushels of corn on one acre of ground, and thinks the writer must have referred to 150 bushels of ears and not of shelled corn. In the summer of 1898 Mr. Bradford writes he worked on the farm of Elbridge Ruggles of Hardwick, Mass., and "we raised that year, on one measured acre of ground, 97 bushels and 7 quarts of shelled corn, which was the largest yield he ever saw. This acre of corn was entered and was awarded the first premium at the agricultural fair at Barre, Mass., and was considered a record-breaker at that time."

The Florida Razorback.

The Florida razorback is the hog indigenous to this climate and soil. He is usually large of limb and fleet of foot, being the only known porker that can outrun a darkey. He has a tail of wondrous length, which, while he is in active motion, he twists into the tightest corkscrew, but with which while quietly feeding he raps his leathery sides much in the same manner that the dole cow uses her tail. He is self-supporting. He earns his own living, and thrives equally well in the highwoods, in the flatwoods, in the hummocks and in the marshes. He subsists upon anything he can find above the earth or underneath its surface. He has a clear, far-seeing eye, and is very sensitive of hearing. Nature has equipped him with a snout almost as long as the beak of the pelican of Borneo, with which he can penetrate the earth many inches in quest of worms, snakes and insects. He is the most intelligent of all the hogs, and is likewise the most courageous. He has been known to engage in mortal combat with a coon for the possession of a watermelon, and to rend asunder a barbed-wire fence.

Seven of Mr. Billings' horses, that have been in training at the Cleveland track, have been shipped to his Chicago stable, and it is Mr. Billings' intention to race them at the matinees of the Chicago Driving Club. The list includes *Hontas Crooke* (2.09), *Dan Westland* (2.08), *Sunland Belle* (2.08), *Ellert* (2.11), *Rockley Boy* (2.13), *Franker* (2.14) and *Rightwood* (2.14). Lucille (2.07) and a number of others have been left in Doc Tanner's hands at Cleveland, and he will fit them for other engagements.

Agricultural.

Dairy Notes.

Just now there seems to be some controversy among dairymen as to the comparative merits of having the cream taken from the milk by a hand separator at home or a skimming station where a power separator will do the work for many farmers. As we have not had opportunity to examine the practical working of either method, we will not express an opinion, but set forth some of the arguments offered by those who have taken different views.

Those who believe in the farm separator say that having the skimmilk at home to feed to calves and pigs while it is warm and sweet is equal to 1½ or 2½ cents extra value for the pound of butter, while the cost of hauling to the creamery is so reduced as to add about another 1½ cents to the butter value, and the factories average about 1.15 cents less in cost of butter making when they get only the cream than when they have to separate it from the whole milk before churning. A gain of from 3.15 to 4.15 cents a pound in value of butter from the milk is an important item.

Separated cream does not sour as quickly as the whole milk, and is less liable to be rejected, as the cream is taken from the milk when in best condition as fresh drawn. The farmer has less cans to wash and scald, less to keep cool, and a lighter load to take to the creamery, and only empty cans to take back, and if he wishes he can have those cans washed and steamed at the creamery, which will in part compensate for extra labor of running the separator, besides insuring that the cans are better cleansed than they are at many of the ordinary farms, especially after they have been used to carry home sour skimmilk.

With the farm separator it will not be necessary to go to the creamery on the Sabbath day, or for the creamery to run, and on other days neighbors may combine so that one can carry the cream that is taken from several dairies, where each might have a load if all the milk were to be taken and the skimmilk taken back. Each one has the skimmilk from his own cows, and if he wants to drink it and allow his family to do so, or to feed it out, it will be his own fault if it is not sweet and wholesome.

The advocates of the skimming station claim that when skimmilk is heated to 185° before it is sent back, all germs in it are killed, and it is even better than when separated at home, which we do not believe. The cost of wear and the care of fifty or sixty farm separators is greater than on one large one, and the aggregate of labor cost of running is greater, which is true, but the labor on the farm is a part of what the farmer has to dispose of for his profit.

They say that if only cream is taken to the creamery the farmers must go as far with a light load as he did when he carried all the milk. Co-operation may remedy this, and if not the horses would prefer the light loads, especially over bad roads. They also claim that it is more difficult to obtain an accurate test of the butter fat in cream than in the milk, and that there is more danger that all the several farm separators will not be as well cleaned every day as would the one large one at the creamery or skimming station. We cannot dispute either of these claims, though we are not sure that they are correct. We have read of creameries where there was as much carelessness and as much neglect of cleanliness as the poorest dairyman would be guilty of.

We know reports from some of the best dairy sections show that farmers are putting in farm separators, and that some of the creameries have encouraged them to do so, even providing capital to purchase them when farmers were unable or unwilling to do so, and we have not heard that either party has regretted such action.

In a locality where there are dairies enough so that a supply for the creamery can be obtained within a few miles, and where it is in charge of a buttermaker who is both competent and careful to produce the best results from the milk, the better way may be to take the whole milk, but where it must be collected over a large territory the use of a separator at home seems to offer the best results in lessening the labor of the farmer and improving the quality of the butter product; and if any of the patrons are found to furnish poor cream or that which is tainted in any way let an inspector visit them, point out the cause of the trouble, and inform them that unless reformation is made the cream will surely be rejected.

Whether the cause is lack of cleanliness, foul stables, improper food, impure water or diseased animals this inspector should be competent to detect it, and should be well supported, not only by the manager of the creamery, but by all other patrons in any measures he may order to be taken to remedy the fault.

To run all milk in a thin sheet over a series of pipes filled with ice water is all that is needed to aerate and cool it, at the same time it is perhaps the easiest and least expensive method of insuring long keeping. Such a series of pipes can be prepared at small cost, and with a strainer at the bottom or place where milk passes out, there will be but small chance of injurious bacteria increasing and multiplying there so rapidly as to insure an early accession of the rancid flavor, and several others of the many bad flavors.

Butter Market.

Although butter receipts have not varied much from the previous week, and prices are not materially changed, there is a firmer feeling not entirely due to the advance in New York. Some dealers ask 20½ cents for best creamery, and one claims to have sold at that figure, but we call 20 cents a fair quotation for extra Northern or Western, and 19½ to 19 cents for large ash tubs. Boxes and prints are in only fair demand, at 20½ cents for Northern and 20 cents for Western, with firsts at 18½ to 19 cents, seconds at 16 to 17 cents. Dairy is dull excepting for best grades at 18 to 18½ cents for Northern and 17½ to 18 cents for New York. Firsts are 16 to 17, seconds at 14 to 15, and low grades 12 to 13 cents. A light trade in renovated at 17 cents for choice and 12 to 16 cents for fair to good, while little is doing in imitation creamery at 13½ to 15 cents, and less in ladies at 10 to 14 cents. Jobbers want 22 cents for boxes and prints and 21 cents for best tubs, but would shade those figures a little for good orders. They are scarcely as firm as receivers. Western creamery arrives in good condition, and if prices break there they must go lower here.

The receipts of butter at Boston for the week were 44,905 tubs and 30,722 boxes, a total weight of 2,214,988 pounds, including 57,755 pounds in transit for export, and with the latter deducted, the net total was 2,157,233 pounds, against 2,091,855 pounds the previous week and 2,035,333 pounds for the

corresponding week last year. This week's receipts are a little larger than the largest last year.

The exports of butter from Boston for the week were 151,795 pounds, against 2328 pounds the corresponding week last year. From New York the exports were 5092 tubs, and from Montreal 15,361 packages.

The Quincy Market Cold Storage Company reports for the week as follows: Taken in, 23,309 tubs; put out, 715 tubs; stock, 63,592 tubs, against 54,500 tubs a year ago. The Eastern Company reports a stock of 11,022 tubs, 3000 tubs more than last week, and with these added, the total stock is 75,104 tubs, against 57,014 tubs at the same time last year.

Massachusetts Crop Report.

We have received from J. W. Stockwell, secretary of the Massachusetts State Board of Agriculture, the following crop report for the month of May:

Owing to the excessive rains and the prevalence of cool east winds, the season is now much behind the normal, so far as the progress of vegetation is concerned. From a week to ten days late in western sections and from ten days to two weeks in eastern would seem a fair statement. The excessive moisture and consequent condition of the soil has made plowing and planting most difficult, and farm work is even more behind the seasonal normal than is vegetation. The fruit bloom appears to have occurred at about the usual time in western sections and a few days later in eastern.

The excess of moisture has been just what was needed for pastures and mowings, and has done much to repair the injury wrought by last year's drought. Although some mowings are still thin from that cause, they promise well in general, and a good crop of hay seems probable, with fairly favorable conditions in the future. There are a few complaints of fall seeding winter-killing, but in general it wintered well, and is now in excellent condition.

The fruit bloom was excellent for all kinds of fruit except apples. Winter apples made a light bloom and other apples only a fair one in most sections, probably owing to the year being generally an off year and the crop of last year having been unusually heavy. Strawberries appear to be setting well and other berries bloomed well. No damage from frost was reported from any section.

Insects are doing practically no damage as yet, many correspondents reporting that none had appeared at the time of making returns. The tent caterpillar is the one most generally reported, and they are not far enough advanced to do any noticeable amount of damage. Other insects reported as present are canker worms, cut worms, currant worms, potato bugs, onion maggots, wire worms, elm beetles, asparagus beetles, cattle flies and brown-tail moths.

The returns again indicate that, while spraying is practised and is constantly increasing, the proportion done to that which could be profitably done is not large, nor is the increase as rapid as it should be. Some correspondents report that little spraying will be done, owing to its being an off year for apples. We can only repeat our former advice to all farmers to spray, even where fruit is a very minor part of their product, as no outlay they can make will be more immediately profitable to them.

There are more reports than usual of a scarcity of farm help, pointing to a somewhat smaller supply than usual in certain localities, but there is, generally speaking, a fair supply of fairly good help. The supply of strictly first-class help is, of course, not equal to the demand. Wages average \$18 per month with board, and from \$30 to \$36 per month without board. Wages for day work range from \$1.25 to \$1.50 per day, in accordance with the locality and season. There are some few reports of higher wages, but not enough to affect the general average. There will be no marked changes in the acreage of farm crops, although the acreage of corn and tobacco will be slightly increased. A few reports indicate a decrease in the acreage of potatoes, but not enough were received to base a general statement on. The only strictly new enterprise reported was the establishment of two hop farms on Martha's Vineyard.

Government Crop Report.

Preliminary reports of the spring wheat acreage indicate a reduction of 1,200,000 acres, or 6.4 per cent. Of the twenty States reporting 10,000 acres or upward in spring wheat, eight report an increase aggregating about 34,000 acres, and twelve a decrease amounting to about 1,235,000.

The average condition of spring wheat on June 1 was 92, as compared with 87.3 at the corresponding date last year, and 91.4 on June 1, 1899. The mean of the June averages for the last ten years is 92.6, and for the last fifteen years 92.7.

The average condition of winter wheat declined during May 6.3 points, the condition on June 1 being 87.8, as against 94.1 on May 1. On June 1, 1900, the condition was 82.7, and on the corresponding date in 1899 it was 87.3. The mean of the June averages for the last ten years of winter wheat is 81.2, and for the last fifteen years 82.3.

The total reported acreage in oats is smaller than the acreage harvested last year by 3.8 per cent. The average condition of oats is 75.3, against 87.7 on June 1, 1900, 85.7 at the corresponding date in 1899, and a ten-year average of 80.

The acreage reported as under barley is 1.2 per cent. smaller than the area harvested last year. The average condition of barley is 91, against 86.2 on June 1, 1900, 91.4 at the corresponding date in 1899, and a ten-year average of 88.5.

The acreage under rye shows a reduction of 1.9 per cent. from that harvested last year. The average condition of rye is 93.9, as compared with 87.6 on June 1, 1900, 84.5 at the corresponding date in 1899, and a ten-year average of 89.4.

The acreage and condition of clover for the country, as a whole, cannot be satisfactorily determined, but the changes in the principal States have been reported. An increase in acreage of six per cent. is reported in Wisconsin, five per cent. in Michigan and Nebraska, three per cent. in New York and Kansas, and one per cent. in Iowa. California the acreage is reported as being the same as last year. In Indiana, Minne-

Scrofula

few are entirely free from it. It may develop so slowly as to cause little if any disturbance during the whole period of childhood.

It may then produce irregularity of the stomach and bowels, dyspepsia, catarrh, and marked tendency to consumption before manifesting itself in much cutaneous eruption or glandular swelling.

It is best to be sure that you are quite free from it, and for its complete eradication you can rely on

Hood's Sarsaparilla
The best of all medicines for all humors.



VIEWS OF OLD BOSTON, No. 3.

Old Masonic Temple, built 1831, afterward United States Court House, with view of Temple place, cut through to Washington street. Taken in 1865; now site of R. H. Stearns & Co.

sota and South Dakota a decrease of four per cent. is reported, in Pennsylvania and Missouri three per cent., and in Illinois two per cent., as compared with the acreage of last year. As to condition Ohio reports twelve points above the ten-year average, Nebraska and Wisconsin ten points, New York and Michigan nine points. Clover States reporting below such averages are Missouri fourteen points, Pennsylvania eleven points, California and Illinois three points, and Minnesota one point. In Kansas the condition is reported as ninety-one, corresponding with the average condition in that State for the last ten years.

The Government crop report is figured by Statistician Brown of the New York Produce Exchange as indicating a crop of 683,871,000 bushels, comparing with 322,228,500 bushels last harvest and 675,148,707 bushels in 1898, which has heretofore been the high record. The report indicates a crop of 776,588,000 bushels of oats, comparing with 809,123,989 last harvest.

Western New York Fruit Crop Report.

Reports throughout western New York, just in, show that the damage wrought by spring rains to crops have been exceptionally heavy. With the exception of corn, much of which will have to be replanted, garden truck is not greatly injured. Many varieties of apples will be scarce and the winter apples are almost a failure. Much will depend on the condition of the weather in the future as to whether a fair-sized crop of other fruits can be reaped. The grape region reports the fruit greatly benefited by the rains and a record yield is expected, says New York Journal of Commerce.

Fairport reports that the cool weather of May has favored the growth of grass and hay is expected to be heavy. Potatoes are delayed by the wet weather, the seeds rotting in the ground and will have to be replanted. Winter apples will be scarce and not enough for home consumption. Henrietta reports oats fine, hay light. All gardens late. North Chili reports only half an apple crop and farmers are replanting corn. Chateaufort says farmers are plowing their wheat under and corn is rotting in the ground. The bean crop is discouraging. Hamlin reports apples, peaches and wheat crops will be small. The hessian fly is destroying winter wheat. Honeye Falls says damages to wheat by hessian fly is greater than by rain.

Pittsford reports early fruits not much damaged, but the wheat crop is greatly injured by rain. Strawberries, raspberries, etc., will be a heavy crop this year. Brockport says the outlook is gloomy in the town of Sweden. The apple crop will be very light, owing to the lateness of spring and rains, combined with the army worms. The grain crop will be the poorest in years. Webster says there will be only a small crop in all kinds of fruits.

Newark reports leading authorities as saying that only half a crop of apples will be reaped this fall.odus says only one-third crop of apples can be expected, but peaches promise better things. Clyde reports Baldwin apples a complete failure. Wolcott says crop conditions will average about fair, with apples a failure. Walworth reports apples light, with few Baldwins in blossom. Naples says the grapes are very promising, and a heavy crop will be gathered. Phelps says wet weather has injured apples considerably, but has benefited other fruits. Canandaigua says crop prospects seldom more favorable since rain ceased every fruit but the apple promises well. Strawberries will be the biggest and best crop in years, and the grape region south of here reports the growth favorable. Genesee says the yellow appearance of wheat has disappeared. Farmers in the region who planted on low lands are plowing their wheat under and the ravages of the hessian fly are likely to do more damage than the wet weather. In some sections the peach crop is threatened by "leaf curl."

New York Markets.

Southern vegetables in good supply and prices lower with fair demand. Prime Southern Rose potatoes are \$3 to \$3.75 a barrel, and Chili \$2.50 to \$3.25. No. 2 at \$1.75 to \$2.50. State and Western \$2.25 to \$2.37 a sack or for 180 pounds. Southern beets \$2 a barrel, and in bunches \$2.50 to \$4. Onions from New Orleans are \$2 to \$2.25 a barrel, \$1 to \$1.15 a bag. Egyptian \$1.75 to \$2 a sack and Bermuda \$1.50 a crate. Can-

ada turnips \$1.50 to \$1.75 a barrel, and Jersey white \$2 to \$3 per hundred bunches. Radishes 40 to 50 cents a hundred. Celery \$3 to \$3.50 a case, egg plant \$2.50 to \$4 a box, and asparagus moving slowly at \$3.20 to \$5 a dozen for Colossal, extra large white or green \$2.50 to \$3, prime \$1.75 to \$2.25, fair at \$1.50 and culls at 75 cents to \$1. Squash, Florida yellow 30 to 50 cents a crate, and white 25 to 40 cents, Charleston yellow 30 to 75 cents a bushel basket and white 30 to 50 cents.

Cabbages in good demand at 75 cents to \$1.25 a barrel, and Long Island spinach the same, with lettuce from 50 cents to \$1.50 a barrel. Charleston and Savannah cucumbers \$1.50 to \$1.75 a crate, and Florida at 75 cents to \$1.25, or \$1 to \$1.50 a basket. Peppers \$2 to \$3 a carrier. Tomatoes \$2.50 to \$2.75 a carrier for fancy, and \$1.50 to \$2.25 for fair to good. Green peas selling well, some Jersey at \$1.50 to \$1.75 a basket, and Maryland at \$1.25 to \$1.50. String beans very much in quality. Some Norfolk sold at \$1.75 to \$2.25 a basket, North Carolina at \$1 to \$2, and Charleston at 50 cents to \$1.25 for wax and \$1 to \$1.50 for green. Many lots badly spotted.

Apples nearly gone. A few Baldwins in storage at \$1 to \$3.50, Russets at \$3 to \$3.50 and second quality at \$2 to \$3. Peaches from Florida and Georgia coming very poor; a few bring \$2 to \$2.50 a carrier, but more sell at \$1 to \$1.50. Strawberries in large supply and dull. Some good to fancy Maryland sold at 8 to 10 cents, and ordinary at 5 to 7 cents, while fair to choice Jersey brought 6 to 9 cents and inferior 4 to 5 cents. Carolina blackberries are 13 to 14 cents, blueberries 6 to 8 cents and green gooseberries 6 to 8 cents. But few Florida watermelons arrive and they bring 35 to 40 cents each, while muskmelons are \$2.50 to \$3.50 for bushel boxes fancy and poor to fair at \$1 to \$2.

Aroostook Potatoes.

The total shipment of potatoes via the Bangor & Aroostook Railroad to points west of Bangor, Me., from the crop of 1899, were 2,894,672 bushels, and from the crop of 1900, up to and including May 31, 1901, 2,996,147 bushels, with shipments for June and July to be added.

Aroostook County has been invaded, during the past season, by buyers of seed stock from all parts of the country. The outside buyers for the most part handle only the Red Bliss Triumph variety for Texas, and a small-sized corner was established at one time, causing the price to run up to \$2.35 per barrel for this particular variety, while the others were selling for about \$1.50.

The Texas farmer prefers the northern Aroostook stock and will use nothing but the Red Bliss Triumph variety, while the other Southern States use very few of that variety. It is a fact perhaps not known to all of our readers that farmers of the South cannot raise their own seed stock potato of a direct line drawn from Memphis, Tenn., to Charleston, S. C., even with Northern stock. North of that line, however, seed raising is carried on with fair success. They have two crops in the South, one about May and June and another in November, and while it is too hot to raise good, sound stock below the line mentioned, they do raise from the Northern seed first quality potatoes for consumption.

Notwithstanding there was a shortage in 1900 crops in Aroostook, probably more potatoes will be shipped than ever before. This is accounted for from the fact that the starch factories there did not absorb the usual quantity in making their product, owing to the comparatively high price of potatoes during the grinding season and the weak state of the starch market. The result is that there will be a falling off of fully twenty per cent. in the shipment of starch for the season.

Of the 1900 crop of potatoes raised in Aroostook County, 376 carloads have been shipped to Southern States, and 417 carloads to Charleston, S. C., fifty-two carloads to Georgia, eighteen carloads to Florida, thirteen to Virginia, eight to North Carolina, thirteen to Washington, D. C., twenty to Maryland and two to Louisiana.

To show the steady increase of the shipments to the Southern States the last few years, we may state that the crop of 1897 only showed 163 carloads shipped to the South; the crop of 1898, 251 carloads; crop of 1899, 321 carloads, and the crop of 1900, 376 carloads.

Such has been the demand for potatoes at the leading shipping points in the Aroostook County that there are now few potatoes unsold. Last week, potatoes were quoted there at \$2.50 per barrel for Dakota Reds. The peculiarity of this variety is that it is a very late keeper and of excellent quality late in the season. Usually in the fall and winter it is heavy, does not cook mealy, and is not much used for table purposes, but later in the winter and spring it is one of the most esteemed varieties.

The prices recently prevailing in Aroostook County are the highest since the shipment of the crop of 1900 commenced. The high price of potatoes the past spring in Aroostook has had the effect of inducing the planting of a large acreage in that county, and generally in other sections of Maine.

Sale of Imported Jerseys.

The famous sale of imported Jersey cattle at Coopersburg, Lehigh Co., Pa., the property of T. S. Cooper, importer, of Linden Grove farm, occurred, according to the advertisement, Thursday, May 30, 1901. The well-known and ever-popular Peter C. Kellogg of New York was the auctioneer. The prices for all the animals sold at auction averaged higher than at any public sale for at least a dozen years.

As Mr. Kellogg writes: "Whether this is evidence of the revival of the one-time fancy for breeding the 'gentleman's cow' or the old strife to produce the greatest year-around butter cow, each must judge for himself. Perhaps it is a combination of both. But this we notice: To bring a large price the cow must be both handsome and useful. It was remarked at the sale that it was the large, well-balanced udders with the big teats which brought the money. But even that did not cover the ground, for when the splendid dairy cow, 'Golden Lad's Countess,' faultlessly equipped as to udder and teats, and so good at the pail that she had milked twenty-eight quarts on the island, and still looked to be milking it, came under the hammer, the bidding was reluctant, and she brought only \$155. This was on account of her sloping rump and ridge back, which gave an uncomely look to her otherwise bloodlike appearance. She was worth the money to a dairyman.

The result is certainly encouraging to all breeders of high-class Jerseys. The breed has won its place in the practical economy and the American system of dairying. Upon this basis its footing is a firm one. While Jersey grades best meet the demands of creameries, the blood value of the pure stock must continue to go higher."

The highest-priced animal was the bull Golden Monplaisir, which sold for \$3000. The highest-priced cow was Golden Roseby, which sold at \$2775. Three imported service bulls sold at an average of \$1943.33. Six imported yearling bulls sold at an average of \$500. Nine imported bulls under one year sold at an average of \$216.66. Fifty-two imported cows sold at an average of \$504.32. Thirteen imported two-year-old heifers averaged \$354.23. Fifteen imported yearling heifers averaged \$212.33. Eleven imported heifers under one year averaged \$372.27, so that the 109 imported cattle sold for \$48,320, averaging \$443.58.

Notes from Washington, D. C.

The Secretary of Agriculture prior to his Western trip carefully examined some rough plans which had been submitted to him for a new building for his Department. Professor Galloway, the director of the new Bureau of Plant Industry, who is also in the Department, stated in an interview that he did not believe that the buildings close to the home of agriculture, which he uses for the experiments and propagation of new plants, fruits and flowers, would be disturbed by the erection of such an edifice as has been proposed to take the place of the present antiquated home of such an important branch of the Government.

"However," he said, "we too will try to improve upon our own buildings, for we have found that while we have glass houses which were, when erected, modern in every respect, we now find them entirely unsuitable for our needs. Instead of a great number of heating plants as we now have, one for each building, we shall have a central furnace where the supply for each house can

be regulated. Besides this we shall inaugurate new ideas, and branch out into the forcing of apricots, nectarines, peaches, and even attempt the study of roses and their pollination. In short, we shall not be idle while the secretary is erecting a new home, but will keep pace in our endeavor to have hot-houses which will be up-to-date in every respect."

The Department of Agriculture is issuing a farmers' bulletin on the important pests which prey on growing wheat. The important entomologists state that more than the annual loss from their depredations amounting in bad years to millions of dollars can be overcome by proper attention to preventive methods. The bulletin is concise, clear and well illustrated. It can be secured like other "farmers' bulletins" on application to senators or members of Congress or to the Secretary of Agriculture.

New York Farm Notes.

In this section of northern Hamilton County the cold, wet weather has retarded corn planting. Not more than one-third of the corn is in the ground, and it will need several dry days before the ground will be dry enough to work, as it will need some cultivated again before planting.

Even so late as June 7 I heard of some farms in the town of Newport, on Long Island, where potatoes have not yet been planted. Pastures show a luxuriant growth of grass, but the feed lacks substance, and the cows are not doing as well as they should.

The hay crop is looking extremely well, and is ten days ahead of time. Oats are a good color, but do not grow as fast as they should. Early-planted potatoes on sandy soil are ready for the cultivator.

Roads are badly washed and will require a great deal of work to put them in good condition. Young stock is in good demand at fair prices. Dairy cows are worth from thirty-five to fifty dollars each. A Giant Blue sold a carload of Northern cows in two days, at prices ranging as above.

W. S. CARPENTER.
Russia, N. Y., June 7.

Tormentor's Lass 59832.

We present to the readers of your paper this week a likeness of Tormentor's Lass 59832, a model dairy cow in every particular. Who could look at her picture and not feel that she is one of the greatest cows of the breed. See the intelligent, clean head, slim neck, lean shoulders, straight back, large heart girth, great length and depth of body. Her skin handles like a glove. Although this picture was taken five months after calving, it shows a magnificent udder of the right shape, with perfect teats well placed.

Her breeding is as good as her individuality. She is a daughter of Tormentor, imported, sire of forty-two in the list, and her dam is Addie P., dam of one and full sister to Lily Martin of World's Fair fame. Addie P. is by Ida's Stoke Pogis, sire of twenty-eight, and she is out of Sigletta, test sixteen pounds, a daughter of Sigletta, test nine, and Kathletta, 22 pounds 12 ounces, the dam of five in the list, including our great cow Kathletta's Fancy, 17 pounds of ounces from 344 pounds 9 ounces milk in winter. She gave in one year 11,784 pounds 2 ounces milk, and in two years 22,774 pounds milk.

The above facts, together with her picture, are sufficient guaranty that Tormentor's Lass is a great cow, but her performance in the dairy is of the highest order. She has a weekly test of 19 pounds 3 ounces butter from 283 pounds 3 ounces ounces, testing 539 pounds 8 ounces butter in 1899, and for the first eight months of 1900 she gave 8528 pounds 10 ounces milk, testing 337 pounds 12 ounces butter, a total for nineteen months milking of 15,802 pounds 2 ounces milk, testing 10,000 pounds 4 ounces butter. This record stamps her as a very large producer.

She is the dam of Tormenta, test 15 pounds 12 ounces. Tormentor's Lass was selected by us to cross with Torono, that we might have a son of this bull to follow him in the herd. We now have a son of Torono, and a grand individual he is, eighteen months old. He has been used on a few cows, and if he proves the sire of beauty and utility, like Torono and his grandsons, Sophie's Tormentor, he will be the sire of a century. We can see no reason to doubt his prepotency, judging for his dam such a cow as Tormentor's Lass, with her great backing, and being by Torono, sire of three in the list out of five in the list. Torono is full brother to Sophie Hudson, test 19 pounds 12 ounces from 35 pounds 2 ounces milk, 20 pounds in one day; 11,496 pounds 2 ounces milk, testing 756 pounds 14 ounces butter in ten months. She is by Sophie's Tormentor, sire of 21, including our show cows Figgis and Marna, with which your readers are familiar.

Lowell, Mass. HOOD FARM.
Mrs. M. C. Van Winkle of Stone Ridge, N. Y., has purchased from Hood Farm, Lowell, Mass., a fine heifer calf by Mint, out of Hood Farm's elite. Mint's daughters have extra good heads, udders, and long, specially placed teats. Mint, by Diploma, the sire of 35 tested cows, including Merry Maiden of World's Fair fame, and his dam was one of the prominent cows in the tests at Chicago in 1893. He has 30 per cent. of the blood of Combination 488. Hood Farm's elite is a deep and persistent milk.

Some of the English tenures are exceedingly curious. A farm near Broadbush, in Yorkshire, pays annually to the landlord a snowball in the summer and a red rose at Christmas. The man of Foston is held by a rental of two oxen and a loaf of bread. An estate in the north of England is held by the exhibition before a certain every seven years of a certain vase owned by a family; another, in Suffolk, by an annual gift of two white doves.

Hood Farm, Lowell, Mass., offer this week bull out of the prize-winning cow Marna, who has received word from Hood Farm that the bull is a particularly fine one. He cannot be seen so, as he carries 50 per cent. of the blood of Sophie's Tormentor.

BEAUTY FOR HORSES.

Of the many skin diseases that animals are subject to there are none which can not be brought under control and speedily cured by the use of

GLOSSERINE
(TRADE MARK.)
Its perfect reliability in all the forms of

ERUPTIONS

from which horses suffer has been attested by the fact that here used it with the greatest satisfaction. Thoroughbred, Hackney, and other breeds of the skin, hair, and flesh, showing appearance of the hair, clean scalp, follow bathing and shampooing. Easily applied with a sponge. Valuable for private stables.

PRICE, \$2.00, PREPAID.
WALSH RIDGE CO., Box 3144, Boston, Mass.
AT ALL DEALERS.

Poultry.

Practical Poultry Points.

It is very much the custom of writers on poultry topics to advise the setting of two or three hens at one time, and then giving all the little chicks to one hen, and either allowing those deprived of their clutch to hatch out. It is a very good plan when one has such luck as sometimes results. If they hatch but two or three eggs each the hen will spend as much time in trying to rear them as she would if she had a dozen, and she might as well be given twelve to fifteen chickens to care for. A large hen might have more than that.

There is a chance of carrying this too far, however. The hen that has hatched her chickens, and then loses them, and is put back into the yard, does not usually begin laying again much earlier than she would if allowed to care for them. The chief object should be to select the one that is likely to give the best mother and take the best care of her flock.

We have seen hens trying to perform motherly duties for thirty or more chickens that had been placed with her, including those of her own hatching, but we never thought it to be a success. As she cannot cover so many under her wings after they are a week or two old, some idea of exposure and of crowding in trying to keep warm under her, until she has no more than given but half as many. This loss of half the flock is a serious one, and more than counterbalances the doubtful gain of getting her back into the laying yard.

Before we ever knew anything about brooders, we knew a man who always took his chickens away from the hens that had hatched them, and placed another clutch of eggs under those that proved faithful to their work, and we have even known one hen to hatch three broods of chickens without being allowed to run with either of them. We do not recommend this plan, as the hen gets too thin in setting nine weeks, and any care will not bring her to laying again soon, and it would take much food to bring her to marketing condition.

He kept his chickens in boxes, which were set into a warm building or room at night, covered with a cloth to retain the heat, and on pleasant days each lot was put out into a cage in the yard, where they seemed to be as well contented and thrifty as if they had not been orphans. When the box was brought to take them in they would rush and crowd to get into it as eagerly as ever we saw any run to the call of an old hen. He made a half dozen hens hatch over one hundred chickens, and his loss among them was much less than the usual loss when they run with the hens.

As at that time chickens of two pounds weight sold readily at \$1 each, he found the growing of chickens more profitable than egg production, and the hen that had hatched out two or three broods in the spring was very likely not to lay again until after moulting, and then prove herself a good layer in winter, when the price of eggs was high.

One attempt to make a hen sit twelve weeks to hatch four broods proved a failure, as the hen died before the end of her last term.

We do not advocate this method because we think those who have incubators and a sufficient number of brooders can do much better, but we say that even in warm weather we would not give any hen more than fifteen to seventeen chickens to care for, and in cold weather we would prefer his plan of raising them by hand without a hen to giving a hen more than a dozen. We think we could raise a larger share of the chickens. As regards getting the hens back to laying again if the chickens are taken away, we will say that we have had a Plymouth Rock hen, caring for a good brood of chickens, begin laying in the coop when the chickens were ten days old, and several that began before they ceased to care for the chickens at night. How much better could they have done if the chickens had not been left with them?

We knew just what these hens were doing because each one was confined with her chickens in a coop with wire cage as yard, and no others could get there to lay an egg. Old hens will not begin laying again as soon as the young ones if the chickens are taken from them, though in this the individual character of the hen and perhaps her previous care has as much influence as breeding. Perhaps also it may depend largely upon whether the hen is given her clutch of eggs when she is broody for the first time, or whether she has been broken up once or twice after the brooding instinct began.

The Summer Diet of Chickens.

There is no perfect summer or winter food for chickens, but with a little ingenuity in mixing their diet we can supply them with what may be called perfect food. A good deal depends upon the nature of the chickens and fowls in regard to the food, and also upon the season of the year. While a fair supply of corn may do for winter feeding, it could hardly be recommended for summer feeding. It is altogether too fattening and heating. On the other hand a little rice is good for the fowls in summer, and totally unsuitable for winter. There is practically no heating element in rice, and this is what we need for summer feeding, food that will nourish without heating.

Now when we feed summer or winter for eggs we must consider food from a different standpoint. We need to supply the fowls with egg-producing material, and for the time we must consider the relative importance of heating and non-heating foods much less than formerly. Usually, however, foods that make flesh and fat do not contribute to the egg-producing abilities of the fowls. The foods adapted to the latter are usually in a class by themselves. In addition to them we need consider only such other foods necessary to repair the daily waste and loss of heat and fat. In cold weather the loss of the latter is much greater than in summer, and consequently the proportion of these foods must be larger.

Both fowls and chickens indicate what they most need if turned loose. They will seek for grains, seeds, worms, slugs and all sorts of natural foods. The more of this natural food they can secure the better will be for them. Chickens that can forage for a living in summer will always be healthy and robust. But we must not forget that very often they fail to secure enough to keep them in good growing condition. After they have foraged for the day they need additional food. But in the summer this food should not be corn, which so many think will suffice. The evening meal would be much better for the poultry if composed of a great variety of seeds, grains, rice, scraps from the table, ground fresh bones, grit, oats, barley and so on. Make such an evening meal as varied in its com-

position as possible, adding as few fat-producing foods as the case will warrant. Feed the poultry freely with this mixture every night, giving them all they will eat up clean. In the morning turn them loose to forage again, feeding them artificial food only when night comes again. Of course, where there are many colonies kept, the foraging grounds will be more limited, and the birds will have to receive more artificial foods.

ANNIE C. WEBSTER.

Poultry and Game.

Rather a quiet trade in poultry. Fresh-killed Northern spring chickens 35 cents for choice, 25 to 30 cents for fair to good. Fowls, extra, 13 to 14 cents, and common to good 10 to 11 cents. Spring ducks 15 to 16 cents. Pigeons from \$1.25 a dozen for choice to 75 cents or \$1 for fair to good. Squabs \$1.50 to \$2.25. Western ice poultry in good supply. Spring chickens at 20 to 25 cents, fowl 9 to 10 cents, old roosters 6 to 7 cents and turkeys 75 to 9 cents. Frozen poultry dull. Broilers 16 to 17 cents for choice, 14 to 15 cents for common. Chickens 11 to 12 cents for choice, 9 to 10 cents for fair to good. Fowl 8 to 10 cents, and turkeys 10 to 11 cents. Live poultry in moderate supply, spring chickens at 20 to 23 cents, fowl 10 cents and old roosters 6 to 7 cents. Game steady at last week's rates.

Horticultural.

The Right Form of Fruit Trees.

Not a little discussion has been caused in the past as to the relative form in which fruit trees should be pruned to obtain the highest results. Unquestionably the natural shape which the trees assume indicates that there is a difference intended by nature. Thus the wide-spreading branches of the apple tree shows that it was never intended that it should be pruned to an upright form, as the peach or even some varieties of pears. Moreover, the same rule cannot be applied to all varieties of any class of trees. There are pear trees which by their natural shape seem to show that nature intended that they should grow upright, and others which spread out more. It may be accepted as a general rule, however, that the lateral branches of a pear tree should never be allowed to develop at the expense of the head or centre of the tree. A wide-spreading pear tree means a poor head and a struggling growth.

After all, we must take our cue from nature. When a variety shows a tendency to spread or to grow upright, it is well to defer a little to the natural inclination of the growth, and merely use the pruning knife to control and direct the growth. The trees of every variety should be trained and pruned in the same general way. Once satisfied as to the best shape, this should be rigidly adhered to. It not only looks better, but it makes the orchard more systematic. If it is the best way, it should answer for all the trees of that variety.

In apple trees there is the same variation in form and shape. The Northern Spy apple tree naturally assumes the very upright growth, and it would be a mistake in pruning to attempt to cut off the top to make it spread in a low growth such as the Rhode Island Greening always presents. The latter spreads so wide and low that it is necessary to trim off the low branches to keep them from touching the ground. Such a tree needs constant pruning, and the limbs should never be allowed to come within five feet of the ground. Otherwise light and air cannot get under the branches, and dampness always collects there. Keep the wide-spreading, low-growing form, but do not let nature go too far. The trees need guiding and training, and they will produce better and more apples. Most other apple trees should be trained to assume the inverted umbrella shape. This is probably the nearest to nature's intention of any.

S. W. CHAMBERS.

Orchard and Garden.

A writer in Farmers' Guide tells that some years ago he sent an order in February for root-grafted fruit trees of such variety and such quantity as he desired. In April the little grafts came by mail. They were set in nursery rows three feet apart in the row, and well cultivated. In eighteen months they were as large as the ordinary three-year-old trees. Then they were set in the orchard and garden. In six years from the time he received them, they were as large as the average twelve-year-old trees, and were bearing apples, and all there. This is a strong argument for what we have many times said, that nothing is gained by buying large trees. The large ones too often have the roots mangled in taking up, dried up by the sun in transportation, and then are crowded into a hole too small for them, and sometimes buried in manure strong enough to destroy any life there is left, and it is little wonder that they fail.

Young Mothers

Stand in special need of help while the baby is being nursed. Dr. Pierce's Favorite Prescription not only strengthens the woman for motherhood and makes the birth hour practically painless, but it increases the nutritive secretions on which the child is fed. It soothes the nerves, encourages the appetite and rapidly restores the mother to robust health. There is no alcohol in "Favorite Prescription," neither opium, cocaine, nor any other narcotic.

"I wish to let you know the great benefit my wife derived from taking your 'Favorite Prescription'." Mr. Robert Harden of Brandon, Manitoba, Box 236. "It was a case of childbirth. We had heard so much of it that my wife decided to try it. (I may say my wife is thirty-three and was her first child.) She commenced to take 'Favorite Prescription' five months before her child was born. We have a fine, healthy girl, and we believe that this was owing to the 'Favorite Prescription' taken faithfully according to directions. We shall certainly recommend it wherever we can."



wonder that the nurserymen say that but about one tree in ten lives after it is planted. The little grafts such as he speaks of require no more labor in setting than so many cabbage plants, and need the same care afterward until set in the orchard, and need no forcing beyond that which they get in good soil until they begin to bear. Then they need more care to keep them from growing too fast and bearing too much than they do to force them to do more.

We think much depends upon both the stock in which a graft is set and the tree from which it is taken. We would not care to have scions from a young tree in the nursery which had never borne. Taken from a bearing tree they come into bearing earlier, and one has the advantage of knowing what was the habit of growth, time of ripening and character of the fruit on the original tree. Often two trees called the same variety may differ much in one or all of these particulars, perhaps because of location and soil, and perhaps because of the influence of the stock in which they were placed. The influence of the stock is now acknowledged by nearly all horticulturists. The Northern Spy, Ben Davis and the Baldwin are among the trees advised for grafting winter apples on. They are hardy, with straight, strong trunks and erect branches. The Red Astrachan and Tallman Sweet are recommended for fall fruit. The King, Twenty Ounce, Spitzenberg and Early Harvest are said to be undesirable as lacking some of the above qualities, and seedlings are unreliable as their character is unknown. Crabs are not generally desirable as the trunk below the point of union may grow so much slower than that above as to cause a weakness there.

Farmers' Cheap Fertilizers.

Clover has long stood at the head of the list of cheap fertilizers for farmers, but its cheapness is sometimes a disputed point. I have seen cases where clover was anything but a cheap fertilizer. When you get a poor stand of clover it is not cheap, but expensive, far more so than if one bought commercial fertilizer outright. Clover has its purpose in the farm economy, and if properly used it does well. But not too much value should be set by it. If the land is right for clover, and one can get a good stand, it is a cheap fertilizer, and every farmer should make it a point to use it. But the cheapness is one of relative importance, and it cannot be said to be the best and cheapest fertilizer even in the majority of cases.

Personally, I think cow peas, where they can be raised, are a cheaper fertilizer, and likely to give the best all-round satisfaction. We all talked about the value of clover for this purpose before we knew much about cow peas. Now our ideas and methods are being revolutionized. We are raising more cow peas and less clover proportionately, and yet every now and then you will hear some farmer say that cow peas are not raised in the North by intelligent farmers. I heard it the other day from an otherwise good farmer. No, it was not otherwise a good farmer, though apparently successful. In the same breath he said he never raised ensilage, and didn't think it was much better for the stock than so much stale molasses. Now, the opinion of such a man is hardly worth quoting, except to show that some are so thoroughly opposed to any innovation that they will shut their eyes to everything modern.

Cow peas are raised more and more every season in the North, and they are rapidly becoming the farmer's cheap fertilizer. They are crowding out clover in this respect, and they will eventually make our farming far more profitable. Cow peas furnish nearly twice as much forage for live stock as clover, and when harvested they leave the field in better condition for other crops. Moreover, cow peas will grow on land which is unsuitable for clover, and where many grain crops only sparingly grow. Stock likes cow peas and will sometimes eat them in preference to the best clover hay, and I think they will show up as good results, from any point of view, as a continuous food. W. E. EDWARDS, Illinois.

Vegetables in Boston Market.

There is about the usual supply of both native and Southern vegetables in the market, and prices are not as firm as last week only on the very best. Old beets are lower at 25 to 35 cents a box, new bunches at \$1 a dozen for hot-house and \$3 to \$5 a hundred for Norfolk. Beet greens 25 to 35 cents a bushel. Carrots 75 cents a box and bunches 75 to 85 cents a dozen, with nice flat turnips at same rate and yellow at \$1.50 a barrel. Egyptian onions \$1.50 to \$2 a sack and Bermuda \$1.75 to \$1.85 a crate. Leek 75 cents to \$1 a dozen and radishes 50 cents a box. Hot-house cucumbers \$4 to \$4.50 a hundred and Southern \$2.25 to \$2.50 a basket, \$1.25 to \$1.50 a crate. Florida peppers \$1.50 to \$2.50 a case as to condition. Egg plants \$2.50 to \$3.50 a box. Tomatoes 10 to 15 cents a pound for hot-house, and Southern \$1.50 to \$2 per carrier for fair to good, and a few choice \$2.25. Rhubarb one cent a pound, and celery from \$1 to \$1.75 a dozen. Asparagus in fair supply at \$3.75 to \$4 a box or \$1 a dozen. New marrow squash \$3 a barrel crate and summer at 50 cents to \$1 a barrel.

Cabbages not so plenty and in fair demand at 20 cents to \$1.25 a barrel, or 75 cents to \$1.50 in barrel crates. Cauliflowers \$3 to \$3.50 a case, lettuce \$1 a long box. Spinach 25 to 35 cents a bushel, and parsley 50 to 75 cents. String beans in light supply, and best selling at \$3 a basket for Norfolk, others \$2.50 for wax and \$2 for green. Peas in moderate supply at \$1.50 to \$1.75 a basket. Mushrooms from 50 to 75 cents a pound. Old potatoes coming more freely and

TORMENTOR'S LASS 59832.

lower. Aroostook Green Mountains 95 cents for extra and 90 cents fair to good. Hebrons fair to extra 80 to 90 cents. Dakota Red 75 cents, York State round white the same, and Chenangoes 80 to 85 cents. New Southern No. 1 \$4 to \$4.50 a barrel, No. 2 \$2.50 to \$3, culls \$2 to \$2.50. North Carolina sweets \$2.25 to \$2.75 a barrel crate.

Domestic and Foreign Fruits.

Apples are nearly done now, a few Ben Davis selling at \$2.75 to \$3.50. Roxbury Russets at \$3.25 to \$3.75, and No. 2 at \$1.75 to \$2.25. Strawberries in light receipt. Some choice lots sold at 10 to 12 cents, but more from 5 to 8 cents. North Carolina blueberries are 7 to 10 cents a quart, blackberries 12 to 15 cents and green gooseberries 8 to 10 cents. Choice Florida peaches are \$2 to \$2.25 a basket, but Georgia early are small and poor, and best 30 cents to \$1, with some not paying freight. California peaches at \$1.75 to \$2.25 a box and cherries \$2.50 to \$3 a crate. A few cranberries yet at \$3.50 to \$4.50 a crate. Florida muskmelon plenty, but many poor ones, and selling slowly at \$2.50 to \$3 a crate.

California oranges in fair supply, and St. Michael or seedlings \$3.25 to \$3.75 a box, navels 175, 200 and 216 counts \$3.25 to \$4.25 for choice to fancy, 150 counts \$3.75 to \$4.25 and small counts \$3 to \$3.50. Bloods are scarce at \$3.50 to \$4. California grape fruit from \$1.50 to \$3.50 a box and Florida, if they can be found, at \$6 to \$9. Lemons in fair demand, 300 counts fair to good \$2.50 to \$2.75, choice \$3 to \$3.25, fancy \$3.50 to \$3.75, 300 counts about 25 cents less on same grades. California lemons nearly done, poor to fancy from \$1.50 to \$3.25. Pineapples in full supply. Florida 24 to 36 in a box, 8 to 14 cents each. Some fancy Porto Rican 40 to 60 cents each. Figs and dates unchanged. Bananas in full supply at \$1.50 to \$2.50 per stem.

The Hay Trade.

Receipts of hay have not increased very much in the Eastern markets, but the feeling still is in favor of buyers who are taking only light stocks and talking about the heavy crops that will soon be ready. Like some other expected crops it may not materialize, or a dry fall may create a demand for it next winter, and we advise our readers not to be too anxious to clean out the mows they have filled.

Boston received last week only 235 cars of hay, 19 of which were for export, and 20 cars of straw. This made actual delivery here less than last week, while for corresponding week last year there were 366 cars, of which 63 were for export and 21 cars of straw. The prices in carload lots on truck were for choice timothy \$18 to \$18.50 in large bales, \$17.50 to \$18 in small bales, No. 1 \$17.50 to \$18 in large bales, \$17 to \$17.50 in small. No. 2 \$16 to \$17, No. 3 \$15 to \$16, clover mixed \$14 to \$15 and clover \$13 to \$14. Straw is in demand at \$19 to \$20 for long rye, \$13 to \$14 for tangled rye and \$9 to \$9.50 for oat.

In New York the receipts were more liberal, being 727 tons of hay, or 138 tons more than previous week, while for the corresponding week last year they were 980 tons. Exports were 1968 bales. The trade was dull, and many lots sold at buyers' prices. Choice timothy was well supplied in all but best grades, which are in fair demand, and Brooklyn has good supply, with prices apparently declining.

The Hay Trade Journal gives highest prices at markets at \$19 at Providence and Jersey City, \$18.50 at Boston, New York and Brooklyn, \$17.50 at New Orleans, \$16.75 at Norfolk, \$16.50 at Philadelphia, Baltimore and Richmond, \$16 at Buffalo and Nashville, \$15.50 at Pittsburgh, \$15 at Duluth, \$14 at St. Louis, \$13.75 at Cincinnati, \$13 at Minneapolis and \$11.50 at Kansas City.

Central Trade Bulletin says the market is difficult to quote, as some dealers sold No. 1 at \$13 and others at \$12, while there are sales of No. 2 at \$11 and \$10.50. The prices in England are reported lower, and shipments direct to South Africa are still going on.

The hay crop of the United States in 1900 was valued at \$445,000,000, only being exceeded by corn worth over \$751,000,000, but not equalled by \$323,000,000 worth of wheat. The majority of this is used on the farm, but it is estimated that the sections that produce hay for sale sent out last year over 6,000,000 tons. The average price in New York city the past winter has been about \$4.12 per ton higher than it was two years ago, making the sales net the producers about \$25,000,000 more than then.

Boston Fish Market.

Fish have been in better supply this week and market dull sells at 1 1/2 to 2 1/2 cents a pound, large at 2 1/2 to 3 cents and steak at 5 cents. Haddock 2 1/2 cents to 3 cents and hake 2 cents for medium, 4 cents for large. Pollock and cusk 2 cents, flounders 2 1/2 cents, scup 3 cents, tautog 4 cents and butterfish 5 cents. Alewives \$1 per hundred, mackerel 8 to 12 cents each, bass 10 cents a pound for striped, 6 cents for black and 5 cents for gray. Bluefish 5 to 7 cents, pompano and snappers 8 cents, sheephead and Spanish mackerel 10 cents. Halibut 5 cents for gray, 7 cents for chicken and 9 cents for white. Lake trout 9 cents and sea trout 5 cents, with whitefish the same. Sea perch 15 cents a dozen and yellow 5 cents a pound. Pickered 10 cents. Shad 16 cents each for jack and 25 cents for roe. Salmon 8 cents for Western and 16 cents for Eastern. Eels 9 cents, fresh tongues the same and cheeks 7 cents. Clams in good demand at 50 cents a gallon, \$2.50 to \$3 a barrel. Shrimps 85 cents a gallon. Lobsters higher at 14 cents alive and 16 cents boiled. Soft-shelled crabs 30 to 50 cents a dozen. Oysters quiet at \$1 a gallon for Norfolk, \$1.15 for

fresh-opened Stamford and \$1.25 for Providence River.

Shortage in Beef Production.

"It has been popularly supposed that the Great American Desert is growing less in extent," said Secretary of Agriculture Wilson the other day upon his return from the western Presidential trip,—"that it is being reclaimed and made more habitable; but I say that it is growing larger every year. This may be thought to be a rather startling statement, but what I mean is that the productive capacity of the American Desert is becoming less and less. It is being grazed to death and its irrigable water supply is diminishing year by year. The overgrazing is killing out the native grasses—they are being eaten out by the roots, while the grazing which is being done in the forests, together with the cutting and burning of the timber, is denuding the forested hills and the mountain slopes. This latter result has the effect of allowing the snow to melt off suddenly, the water coming down with a rush and causing great floods, instead of furnishing a gradual and steady water supply during the irrigating season.

"This is unfortunate for the West, and it also has its various effects on the East. The present high price of beef is no doubt due, in a measure, to the prosperous condition of the country, because, of course, every family can afford to eat more meat, but it is also due to the range conditions I have named. The West cannot produce as much meat as it once could, and it will produce less and less every year."

"What is the outlook, then, for the country to secure sufficient beef and mutton, Mr. Secretary?"

"This condition in the far West means that the farmer must supply the deficit. Wyoming and Nevada do not, I should say, produce over half of the meat they did ten years ago, and the same thing can be said with regard to the arid region in general. It is getting worse and worse, and consequently means for the country and for our export trade will have to come from the farmers of the Mississippi Valley, where they can grow corn and oats for feeding."

"At present the 'good times,' as I have said, affect the ability of families to buy meat, and this affects its price; but this latter is also affected by the ability of the region west of the Missouri river to produce, and this ability, or rather disability, is becoming more and more prominent, while there seems no way of stopping it, so that the Mississippi valley farmer is the man who must produce the meat."

"Our export trade then will be affected by the overgrazing of the Western lands?"

"Yes, but right here is another point in connection with the above. People may not like to have it said to them, but perhaps it is just as well for somebody to speak out plainly. It is high time that the people of this country who are selling stock feed and shipping it abroad should keep it at home and feed it. It is the course of wisdom. There is great profit in feeding meats for the market just now. But we are selling abroad enormous amounts of oats and corn and mill feed, whereas the present prices for meats justify the feeding of this at home. This would keep the fertility on the farm and ship the meat. That is the thing to do."

"The Department of Agriculture at this time," continued the secretary, "is making strenuous efforts,—that is a good word for it,—by sending agents to countries around the China seas and to the Caribbean sea to enlarge the markets for American products, dairy products especially. Why, in the matter of dairy products one class of Americans furnish the very weapons to enable foreigners to defeat other Americans. Our men find the foreign markets completely clogged by Danish butters and cheese, yet, as I have often said, the Danes cannot export a pound of butter or a pound of cheese if the Mississippi Valley farmer did not sell them the feed."

GUY E. MITCHELL.

The Farm Crops of Ireland.

Potatoes have ceased to be the principal root crop of Ireland, if they are to be compared with turnips by weight of yield—last year, for example, only about 1,842,000 tons, against 4,426,000 tons of turnips. Nor was the potato acreage, though twice as great as that of the heavier root, nearly the largest given to any crop. That of oats was larger by 450,000 acres. The Irish product of oats was much greater than the Scotch and Welsh put together, and amounted to 504,000,000 bushels, against 75,500,000 bushels raised in England.

What has to be deplored nowadays in Irish agriculture is not dependence on a single crop, but a general tendency to shrinkage in area of all arable land. In spite of an increase of forty-six thousand acres devoted to mangel wurtzel and beet, this shrinkage has been one of thirty-two per cent. since 1855.

The distinctively Irish crop of flax has lost ground since 1870 to the extent of nearly seventy-five per cent. Land either becomes meadow, or more largely, goes out of cultivation. In these circumstances it is gratifying to see that a rally to flax last year was rewarded by an exceptionally fine harvest. As compared with the year before, the area given to it was thirty-five per cent. greater, and the yield forty-two per cent. greater. Much more than twice as much honey was also produced as the average weight for ten years back.—Belfast News.

Exports of dairy products from New York last week included 2961 tubs and boxes, 281 barrels of butter to Liverpool, 264 packages to London, 60 packages to Hamburg and 160 to Copenhagen, with 900 boxes of cheese to Liverpool, 26 to Southampton, 26 to London, 169 to Hull and 177 to Glasgow, a total of 4268 packages of butter and 11,121 boxes of cheese.

The shipments of leather from Boston for the past week amounted in value to \$184,022; previous week \$200,223; similar week last year, \$236,944. The total value of exports of leather from this port since Jan. 1 is \$4,377,423, against \$4,442,794 in 1900.

The total shipments of boots and shoes from Boston this week have been 94,873 cases, against 93,088 cases last week and 74,556 cases in the corresponding week last year. The total shipments thus far in 1901 have been 1,624,787 cases, against 1,963,382 cases in 1900.

Exports of live stock and dressed beef last week included 541 cattle, 2500 sheep, 17,433 quarters of beef from Boston, 2008 cattle, 16 flour, 12,403 quarters of beef from New York, 1109 cattle, 600 quarters of beef from Philadelphia, 688 quarters of beef from Portland, 811 cattle from Newport, 800 cattle from Norfolk, 2108 cattle, 2140 sheep from Montreal; a total of 16,181 cattle, 4466 sheep, 31,214 quarters of beef from all ports, of which 4776 cattle, 2800 sheep, 19,700 quarters of beef went to Liverpool, 3430 cattle, 661 sheep, 9005 quarters of beef to London, 480 cattle, 1000 sheep to Glasgow, 885 cattle to Bristol, 300 cattle, 476 sheep to Manchester, 200 cattle to Hull, 1000 quarters of beef to Southampton and 10 sheep to Bermuda and West Indies.

The beef position is firm. Extra sides 8 1/2 to 9 cents, heavy 8 1/4 to 8 1/2 cents, extra hind 10 1/2 to 11 cents, good 8 1/4 to 9 cents, extra fore 8 1/4 to 9 cents, heavy 8 1/4 to 9 cents, good 8 1/4 to 9 cents, light 4 1/4 to 5 1/4 cents, racks 6 to 8 cents, short ribs 10 to 12 cents, rounds 7 to 9 cents, rumps 8 1/2 to 12 cents, humps and loins 10 to 13 cents, loins 10 1/2 to 15 cents.

The pork market is firmer, with prices advanced. Heavy backs \$18.75, medium \$18.25, long \$19.50, lean ends \$20.75, bean pork \$15.25 to \$16, fresh ribs 10 cents, corned and fresh shoulders 9 cents, smoked shoulders 9 cents, hard 9 cents, in pairs 10 1/2 to 10 3/4 cents, hams 12 to 12 1/2 cents, skinned hams 12 cents, sausages 9 cents, Frankfurt sausages 9 cents, boiled hams 10 1/2 to 17 cents, boiled shoulders 12 cents, bacon 13 to 14 cents, bologna sausages, pressed ham 11 cents, raw leaf 9 1/2 cents, rendered lard 12 to 10 cents, in pairs 10 1/2 to 11 cents, pork tongues \$23.50, loose salt pork 9 cents, brisquets 11 cents, sausage meat 7 cents, country dressed hogs 7 cents.

Trancon made the exports from Atlantic coast last week include 30,000 barrels of wheat, 3,065,000 bushels of wheat, 2,077,000 bushels of corn, 400 barrels of pork, 13,294,000 pounds of lard, 30,375 bushels of meat.

The official freight list makes the New York exports to Europe and Africa, including Saturday's sailings, 68,282 bushels of wheat, 665,222 bushels of corn, 31,772 bushels of oats, 6,349 bushels of rye, 9586 bushels of barley, 28,922 packages of flour and 3075 bales of cotton.

The visible supply of grain in the United States on June 8 was 35,252,000 bushels of wheat, 16,049,000 bushels of corn, 10,565,000 bushels of oats, 688,000 bushels of rye and 685,000 bushels of barley. Compared with the week previous, this shows a decrease of 1,642,000 bushels of wheat, 344,000 bushels of corn, 630,000 bushels of oats, 45,000 bushels of rye and 127,000 bushels of barley.

The supply of mutton and lamb is full, and the market is only fairly sustained. Veals are dull and easy. Spring lambs 10 to 15 cents, fall lambs 10 to 15 cents, Brighton fancy 9 to 10 cents, muttons 6 1/2 to 7 cents, and in cages, each containing fifty and additional orders are expected.

The exports for the week ending June 7 from Boston were valued at \$1,904,929 and the imports at \$1,329,940. Excess of exports \$574,989. For corresponding week last year exports were \$2,634,380, and imports were \$1,853,637. Excess of exports \$1,680,743. Since Jan. 1 exports have been \$44,413,474 and imports have been \$37,869,923. Excess of exports \$6,543,551. For same period last year exports were \$63,233,305 and imports were \$29,341,183. Excess of exports \$33,892,122.

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The Horse.

Readville Notes.

The stables at Readville are rapidly filling up, and the trainers located there are making up for lost time, although it must be said that they appear to believe in going ahead slowly, as their horses so far as fast miles are concerned are behind even those at neighboring half-mile tracks.

Trainer James Brady is at the track with the following string from Lookout Farm: Timbrel (2.11); Genevieve (2.12); Barney King (2.24); King David, bay colt (3), by May King; dam, Etta Red, by Red Wilkes; Red Way, chestnut colt (2), by Lookaway; dam, Etta Red; Averna, bay gelding, by May King; dam, Apparition (dam of Phantom, 2.16), by Sir Walkill; Kingfisher, black colt, by May King; dam by Kentucky Prince; Marie King, bay mare (3), by May King; dam by Robert McGregor; and Miss Lewis, bay mare (3), by Bingen; dam, Linda Belle, by Linda Wilkes.

Brady also has the following outside horses: Autoress, black mare (4), by Autograph; dam, May Homer (dam of Lecco, 2.09), by Homer. Stephen Hope, bay gelding (7), by Arrowwood; dam, Roxana, by Jack Fowler, and Addie Parker, by Hal Parker.

Timbrel looks to be in fine shape and moves like a piece of machinery, and when Brady let him step through the stretch the other morning it looked as though he could trot just as fast as he had a mind to. Brady has been a mile in 2.25 with Autoress, and one in the same notch with the green pacer Stephen Hope.

Allie Trout came down from Clinton last Friday with six head of the Maplehurst Farm horses. His stable is made up as follows: Baron Courageous, black colt (4), by Baron Wilkes; dam, Dora, by Kohinoor; Baroness Evelyn, black mare (4), by Baron Wilkes; dam, Rosewood, by Wedgewood; Baroness Lady, bay mare (2), by Baron Wilkes; dam, Lady Powell, by Hermes; Baroness Romona, brown mare (2), by Baron Wilkes; dam, Sultana, by Sultan; Baron Hope, brown colt (2), by Baron Wilkes; dam, Bertell, by Astell; and Matanzas chestnut mare (3), by Guy Dirwood; dam, Annie McGregor, by Robert McGregor.

Fred Isabel is at the track with the following horses: Clinton B. (2.08), Danville (2.18), Incarnate (2.25), Velvet Bud (2.24), by Sidney; Maniwa, bay mare, by Charles Derby; Border Lassie, bay mare, by Charles Derby; Starletta A., bay mare (3), by Alfred G.; Ben H., bay gelding, by Robert McGregor; Surprise, bay gelding, by Robert McGregor; and two other green ones.

The fastest work-out mile reported at the track this season is one in 2.23 by the black gelding Darius (2.26), in John Payne's stable.

Trainer Carpenter has commenced to repeat his horses in the neighborhood of 2.30. Jack Wall has been miles in from 2.27 to 2.30, with several of the green ones in his stable.

There has not been a season since the Readville track was opened when so little had been done with the horses up to the 17th of June, but with good weather much can be accomplished in the next two weeks, and doubtless a fair number of horses will be on hand when the season opens at the Breeders' meeting at the track July 2.

Notes from Lexington.

There are few half-mile tracks in the country where so many good horses are being worked as at Jere O'Neil's track at Lexington. Jere is working sixteen head and his brother Billy has six in his string. In common with all the horses in this section their horses have not had much fast work, but the track and roads at Lexington are such that the horses have had good stiff jogging exercise and are all ready for the tuning-up process. Indeed, at the track last Friday nearly all of those who are likely to hear the bell ring got a number of miles under their belts. The track is beautifully located and comes near being an ideal training ground, as there is plenty of shade, an abundance of grass and excellent stable accommodations. The track is an excellent half-mile ring with easy turns, and the footing is just right to muscle up the horses and does not sore them.

Jere has the following horses: *Chehalis* (2.04), *Royal R. Sheldon* (2.08), *Courier Journal* (2.06), *Gyp Walnut* (2.08), *Diablo* (2.12), C. W. Williams (2.14), *Lady Bayard* (2.17), *May Day* (2.21), by Robinson D., and a number of youngsters and green ones which the public will hear about in the future.

Chehalis has been in the stud and has had very little work as yet. *Royal R. Sheldon* looks to be in grand shape, and is moving to please his trainer. He does not seem to be as big gaited as last year, but is more rapid. He has been a mile in 2.21. *Gyp Walnut* is looking fine and has been a mile in 2.24. The other record horses in Jere's string have been given repeats below 2.30, and all look to be in the pink of condition.

Billy O'Neil is working *Marion G.* (2.10), J. E. C. (2.15), *Lexington* (2.18), *Dr. Logan*, an electric-light performer at Combination Park last season, and a couple of green ones. *Marion G.* is being worked with hopes and takes very kindly to them. She is carrying a ten-ounce shoe and a four-ounce toe weight, and Billy expects to reduce the latter to two ounces. This reduction from the thirty-ounce, which was required to balance her without straps, he thinks will enable her to carry her speed better. O'Neil is very sweet on the five-year-old gelding J. E. C., by Tribute. The gelding was not right last season, but is in splendid shape this spring, and if looks count, should give a good account of himself in this season's races.

Running out in the pasture back of the stables knee deep in grass we saw the noted trot performers, *Nelly Bruce* (2.10) and *Josie J.* (2.21). The former has a large, shapely bay filly by Chehalis at foot, and the latter a very lusty bay filly by Bingen.

One of the most promising green ones at the track is a black four-year-old filly by Emperor Wilkes (2.20); dam, Highland Lass, by Buconner. This filly was bred at Reservoir Stock Farm, and showed sensational speed at Mystic last fall, when her present owner gave \$2500 for her. She is very fast this spring, and Billy O'Neil says she has as much speed for a brush as any horse at the track.

Matinee of the Gentlemen's Driving Club.

The first matinee of the season, under the auspices of the Gentlemen's Driving Club of Boston, was held at Readville on Wednesday. The day was favorable, but, owing to the backward season, few horses were expected to start.

Three events were on the programme, and they unexpectedly developed into contests of Grand Circuit calibre. Six of the seven heats contested aroused the keenest enthusiasm among the spectators, especially the

METALLAS, 2.18 1-4, BY MAMBRINO KING, SON OF MAMBRINO PATCHEN; DAM, METELLAS, BY ALMONT, SON OF ALEXANDER'S ABDALLAH.

first heat of Event No. 1, in which Lottie Falls and Burlington Boy had a ding-dong finish all the way through the stretch, under hard drives, the sweet little mare winning by a head only in 2.19, which is a second and a quarter below her turf record, and remarkably fast, all things considered. Mr. Alley, her owner, drove her with great skill and judgment, and landed her a winner of the event.

Mr. Aldrich uncovered a green one of much promise in the bay gelding Addison A., who for the first time heard the bell ring in Event No. 3, and Mr. Alley showed up about as likely a prospect in the bay gelding Almont Benton, Addison A.'s competitor. Addison A. won the first heat in a whipping finish in 2.21. He stepped away to the quarter in the second heat in 3.34 seconds, was over to the half in 1.07, but he was not keyed up to any such clip as this, and he could not carry it. Almont Benton beat him quite handsly through the stretch, winning in 2.24.

Addison A. was drawn the third heat, and Almont Benton had a walkover in slow time. Addison A. is a big, smooth-gaited trotter. He has a stride that carries him well over the ground with each stroke. Almont Benton is a very busy-going horse, steady, level headed, and he acts like quite a high-class one.

It was a day of surprises all around, surprises for the splendid contests furnished, for the time made and for the results.

Mr. Alley won two blue ribbons. Mr. G. A. Thayer won a blue ribbon with Mr. P. B. Bradley's bay mare Gardania.

SUMMARIES.

Event No. 1.—Trotting to wagon, mile heats, two in three.
A. H. Alley's Lottie Falls, by Falls (Mr. Alley).....1 1
H. O. Aldrich's Burlington Boy, ch g (Mr. Aldrich).....2 2
W. D. Hunt's Pastol, ch g (Mr. Hunt).....3 3
Time, 2.19, 2.23.

Event No. 2.—Trotting to wagon, mile heats, two in three.
P. B. Bradley's Gardania, b m, by Candidate (Mr. Thayer).....1 1
S. H. Blodgett's Polyphemus, br m (Mr. Blodgett).....2 2
Time, 2.49, 2.36.

Event No. 3.—Trotting to wagon, mile heats, two in three.
A. H. Alley's Almont Benton, b g, by Gov. Benton (Mr. Alley).....2 1
H. O. Aldrich's Addison A., b g (Mr. Aldrich).....1 2
Time, 2.21, 2.24, 2.38.

Fact and Fancy.

Old Glory will wave and the scream of the eagle will be heard all over Maine on the ever-glorious Fourth, and probably more Fourth, day. Last year and year before last there was comparatively little doing, but this year everything is different, and while many celebrations will be held without the subject of race, those will be held at many points, like Augusta, Bangor, Farmington, North Anson, South Paris and Norway. All these places are out with their programmes, and no doubt many interesting races will be the result.

My friend, Dana S. Pratt, formerly of Mechanic Falls, Me., and a prominent horseman of that section, as well as hotel proprietor, writes me from Raymond, N. H., where he is proprietor of Hotel Raymond, that the track at that place is nearly completed, and races will be held there later in the season. Mr. Pratt is one of the directors of the track organization.

I learn that Ralph Foster, the well-known driver, formerly of Canton, and who has just recovered from a year's serious illness, is now suffering from an attack of diphtheria. This is too bad and he has the sincere sympathy of his many friends. As a driver Ralph marked Eddie B. (2.14), *Solomon* (2.21), *Leola* (2.22), *Nana* (2.27) and several others. Ralph is a sober, industrious young man and a good care-taker and developer of speed, as well as a good race driver, and he has our best wishes for a speedy recovery.

I have received the 1901 catalogue of Lawson's trotting stable, one of the nearest and most attractive little booklets ever turned off any press. The horses listed consist of thirty-eight head. The stallions, eight in number, include the names of Dreamer (3) (2.14), Highland Baron, Belford, Polndexter, etc. The geldings include Borama (2.08), Sagwa (2.13), Glory (2.14), and several without records, while the brood mares and fillies make up the rest of the list.

The last issue of the esteemed Horse Review contains the following on its editorial page: "Some weeks ago we reviewed a recent essay by Dr. George H. Bailey of Maine, in which he returned to the charge in defence of his time-worn 'theory' of the rational impossibility of the two-minute trotter. The learned doctor argued at great length, and at the first glance seemed to have scattered his shot all over the target, but, as we observed, if his ten columns were boiled down they crystallized into a series of arguments all hanging on one peg—the pneumatic sulky. With this statement editor J. W. Thompson takes issue, and among other things says: "The Horse Review cites several separate instances to show that the pneumatic sulky is no faster than the high wheel, but in the face of this very practical man knows that it is, and such argument only proves either the ignorance or the straits in which he finds himself of the one who makes it."

demonstrated that any horse worth training can trial, half-bearing wheel, at least five seconds faster than the other, is a sweeping assertion that is mere conjecture, a position which is, we still submit, strictly in accord with fact."

Dr. Bailey is a ready and graceful writer and needs no defender, for he is simply able to take care of his end of the contention. That his statement was "sweeping" I grant. It is only in dealing with results as a whole and not individual instances that we are able to measure or estimate the difference between the high-wheel and the half-bearing pneumatic wheel. In giving these results the doctor made statements to which the Review took exception. Just what the Review said was this: Quoting from Dr. Bailey: "It has already been demonstrated that any horse worth training can trial, to the half-bearing wheel, at least five seconds faster than the other, is a sweeping assertion that is mere conjecture—as instance Nelson, who trotted in 2.10 to high wheels and could not beat 2.00 to the new sulky; Guy, 2.10 to high wheels, 2.00 rejected; pneumatic, Arlington, 2.10 to high wheels, 2.07 to pneumatic; Stamboul, 2.11 to high wheels, 2.07 rejected; pneumatic; Jack, 2.12 and 2.12; McKinney, 2.12 and 2.12; Vie H., 2.13 and 2.12; Faustino 2.14 and 2.12; Charleston, 2.15 and 2.12."

Here is one of the fastest trotters in the 2.15 list at the close of the high-wheel era (1897) that remained in training several seasons afterward and were among the most prominent trotters on the turf. Their reductions, to the pneumatic wheel, ranged from one-quarter of a second to three and one-half seconds, and the average of the nine was not the infallible doctor's five seconds, but less than two. We could add many more notable names to this list."

To a person of only ordinary "perspicacity" this would look like an argument to prove that the pneumatic sulky was, as a rule, only a very little if any faster than the old-fashioned high wheel, but the more recent declaration that such a statement would be "ridiculous" puts that idea out of one's mind, and ends the argument on that point. Just how much faster it is, as the Review suggests, is only a matter of conjecture, and is approximated only by taking into consideration the great improvement in the speed of all classes of turf horses immediately after its introduction. I have always believed five seconds in the argument to be a conservative estimate. Others may think differently, and in the absence of absolute proof argument can do no good, so, accepting the Review's more recent and explicit statement of its standing on the question I shall consider the incident closed so far as I am concerned.

A correspondent asks, "Who is the present owner of Albrino?" Albrino was last owned by Henry G. Parsley of Dexter, Me., but died a year or two ago. He was one of the best breeders of Almont 33, his dam being Maggie Bryan, by C. M. Clark (Stratford), and second dam, Bryan, a full sister to Patchen Mambrino, sire of Walter E. (2.10), by Mambrino Patchen; third dam, Old Den (grandam of McLeod, 2.21, Olaf, 2.22, and Eric, 2.24), by Gaines' Denmark, or Black Denmark, as he was sometimes called, and he by Denmark, son of imported Westford.

They had a little racing at Dixfield on Saturday, the 15th inst., half-mile heats, and R. G. Dunn of Canton went up with his two colts The Deak, three years old, and Paul Boone, four years old, both by Elder Boone (2.18). Dix is a steady, fast, and game, and has been and has been but little used for years, a veritable cow path, in fact, and nobody who has worked over parlor half-mile tracks, like Combination track, can realize what an apology for a track it is,—yet The Deak paced a half-mile over it in 1.09, and he is in the stud serving a few mares at that.

J. W. THOMPSON.

South Weymouth Track Races.

There was an especially interesting meeting held here today under the auspices of the South Shore Driving Club. The firemen, with hand tubes, from local towns, also offered much amusement in their endeavor to "push water."

Mr. A. L. Power acted as starter in a manner satisfactory to all. In the 2.25 class Juanita, usually very steady, carried the bunch to the top of the stretch, where she belched out a strain of that good-gaited, fine-looking trotter William J. Hynes, who steadily outfooted the field and won in a jog.

In the free-for-all Mr. Charles Lincoln had with the boys would call a "cinch," with his toppy pacer North Star. This horse is pretty well named and was never "jarred" from the start. Lincoln evidently felt confident that he could kill the turn with this fellow at any time. Rob Roy, property of Mr. W. T. Osborn, always a favorite in this section for his consistent racing qualities, was not in good form today, but will be heard from before the season is over.

July 4 there will be a big meeting at the same place by this club.

SUMMARIES.

South Weymouth, Mass., June 17, 1901.—2.25 class, half-mile heats.
William J. Hynes, b h, by Woodbrino (Lolnes).....1 1
Honest Jack, ch g (Lincoln).....2 2
India Pauls, b g (Blanchard).....3 3
Blue Hill Boy, b g (Baker).....4 4
Juanita, ch m (Church).....5 5
Jerome, b g (Wilber).....6 6
Time, 1.11, 1.13, 1.12.

Same day—Free-for-all, half-mile heats.
North Star, ch g, by Sherman Franklin (Lincoln).....1 1
Joel, b g, by India (Lansman).....2 2
William L., b g, by Stanley (Watson).....2 2
Flutter, b m, by Epaulot (Daly).....3 3
Rob Roy, b g (Church).....4 4
Time, 1.13, 1.12, 1.11.

CORRESPONDENT.

Worcester Notes.

A well-defined movement is afoot to hold a series of matinee races at the old Full Moon track at Lake Quinsigamond during the summer and fall. The old track was rejuvenated last fall by horsemen of surrounding towns, and for at least two afternoons of sport took on a show of its pristine glory when the best of 'em were wont to light it out over the veteran course at the time when it was the finest track in central Massachusetts.

The old track this spring comes out of hibernation a bit the worse for wear and tear. In many places it is scarcely better than a country road for levelness, and the surfacing has worn off, leaving the track coarse and rough. Nevertheless, the track is fully good enough for an afternoon of sport with the amateurs, and will, in all likelihood, see at least two or three meets as it did last year.

Horsemen of Grafton, North Grafton and Shrewsbury have begun the perennial argument as to relative ability of road horses, and the old driving club that held two successful meets last year will be resurrected for a couple of little quiet meets, where arguments may be settled infinitely better than around the stove.

The hum of preparation is everywhere about the Greenleaf track these days, and many a prospective world beater is tuned for the season's work. The track, which even as a brand-new one last year established a reputation as being one of the fastest half-mile rings in New England, promises to be phenomenally fast this season. When the track was built in what was little more than a swamp every manner of evil was predicted for it in the way of settling. "It will never stand up," said the croakers. "It will be under water," declared the kickers.

The track today is better and faster than ever it has been since it was turned over to Worcester Agricultural Society by Seth Griffin and contractor Thomas Hennessey. The eagle eye of the most pronounced kicker, with the aid of a microscope, would have hard work to pick a flaw in the new track, and criticism of the committee that selected the site for the new grounds is forever silenced.

For the most part horses at the Greenleaf track will be held to await the Worcester meeting before striking into the New England circuit, although several will be shipped to Nashua to take the word next week. Not a Worcester horse was entered for the opening meet of the New England half-mile track circuit at Holyoke's week, although several at the Greenleaf track are fit to go.

At the track are a number of green ones that have rounded into shape good and quick and are ready for the word any time. Saturday is work-day at the track by general consent of drivers, and horsemen haunt the rail on the last day of the week for a morning of good sport. Thus far there have been no fast early season miles at the Greenleaf track, but heats in 2.30 and under have been put in day after day, and quarters are stepped off in 34 seconds, with an occasional brush a bit livelier by the good things supposed to be about ready to get out for a bit of the money.

THE ROADMAN.

Combination Park.

The first-class afternoon and evening entertainments at Combination Park on the 17th inst. were witnessed by large crowds of spectators. This popular resort is more popular this season than ever before, and the prospect for a most prosperous season are very encouraging. No pains will be spared by proprietor George A. Graves and manager George H. Hicks to make these summer-evening entertainments at this beautiful park the most interesting of any in Boston and vicinity. The ride in the cars is refreshing, the grand stand cool and commodious even on a hot summer evening, the racing by electric light affords close and exciting contests, while every moment of the time between heats is improved by presenting stage attractions that are interesting and highly amusing.

Excellent time was made there by the horses on the 17th inst. Proprietor George A. Graves drove his beautifully gaited trotter Ben Wilkes a half in 1.00 to road wagon, and Young Clon showed a half in 1.03 in a race.

SUMMARIES.
2.22 class, trot and pace. Three half-mile heats, every heat a race.
Little Mapes, blk g (Bailey).....2 1
Willie Logan, ch g (Folsom).....1 2
Bessie Goddard, blk m (Keazer).....3 4
Midget, blk m (Bryant).....5 3
Don Aldo, b g (Pickering).....4 6
Belle H., b m (Shannon).....6 7
Old Points, b g (McDonald).....7 7
Time, 1.04, 1.04, 1.04.

Road wagon race—Half-mile heats, trotters only. Best two in three, owners to drive.
Ben Wilkes, blk g (Mr. Graves).....1 1
Speedwell, ch g (Mr. Allen).....2 2
Elota, b m (Mr. Ross).....3 3
Time, 1.17, 1.14.

Free-for-all, trot and pace. Three half-mile heats, every heat a race.
Young Clon, b g (McGrath).....1 2
Genevieve, ch m (Bailey).....3 1
Lorine, b m (Timothy).....2 5
Ethan Roy, b g (Shannon).....6 7
Lizzie W., ch m (Horton).....4 3
Jay, blk g (Collins).....7 6
Mascer Jr., b g (Libby).....8 7
Drummer Girl, br m (Keazer).....5 8
Time, 1.03, 1.04, 1.04.

Special against time to beat 1.14 to wagon.
Ben Wilkes, blk g, by George Wilkes Jr. (G. A. Graves).....1 1
Time.....1 1

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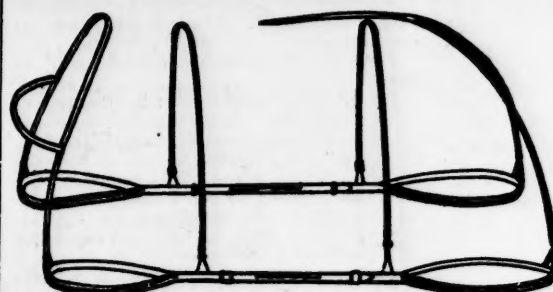
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